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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,401	10/05/2000	Seinosuke Mizuno	198224USOX	1884

22850 7590 05/06/2003

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

DICUS, TAMRA

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 05/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/680,401

Applicant(s)

MIZUNO ET AL.

Examiner

Tamra L. Dicus

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-- **Th MAILING DATE of this communication app ars on the cover sh t with the correspondence address --**
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,158,113 to Ozawa et al. in view of USPN 3715371 to Thomas.

Ozawa teaches a multilayered core tube of brass wire with a coating of chlorosulfonated polyethylene rubber at col. 1, lines 35-45, lines 49-50, col. 5, lines 60-68, col. 6, lines 20-60, col. 7, lines 23-26, and Example 1. The thickness of the cured adhesive is 12.77 mm, which is outside the claimed range of 5 to 25 microns (12-22 microns). However, Ozawa teaches thickness is controlled by the thickness ratios which protect the hose from bulging (equivalent to shrinkage control material). Hence, it would have been obvious to one of ordinary skill in the art to produce a thickness of 5 to 25 microns, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. The thickness effects the amount of shrinkage. See also col. 2, lines 60-68.

At col. 6, lines 23-68, Ozawa teaches a sulfur-vulcanizable starting rubber may be adhered to the outer wall and to brass-platted wires on a reinforcing layer where the addition of

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sulfur leads to improved modulus. While Ozawa does not teach an elastomeric extrusion per se, the Examiner takes the position the sulfur-vulcanizable starting rubber is a functional equivalent since it is an elastomer and capable of being extruded around the outside. See Figures 1 and 2b.

Ozawa does not teach a ethylene-propylene-diene ternary copolymer (claim 22 and 23).

However, Thomas teaches an adhesion promoting agent such as the aforementioned copolymer at col. 1, lines 45-68. Thomas states any polymer can be bonded to a siliceous material, metal, metal oxide or another polymer with said silane compound. Exemplary of the polymers which can be so bonded are the hydrocarbon polymers including saturated, unsaturated, linear, atactic, crystalline or nonlinear amorphous polymers, copolymers, terpolymers, etc. as for example ethylene--propylene--dicyclopentadiene terpolymer. Hence it would have been obvious to one of ordinary skill in the art to modify the brass-coated steel multilayered wire of Ozawa to further include an ethylene-propylene-diene ternary copolymer since Thomas teaches the addition is a known adhesion promoting agent and can be bonded to any metal and polymer at col. 1, lines 45-48.

2. Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,300, 973 to Bezwada in view of USPN 3715371 to Thomas.

Bezwada teaches a method of adhesion of rubber to reinforcing metal such as brass-coated steel wire (col. 1, lines 1-40). The vulcanized rubber-textile matrix has excellent adhesion properties at col. 1, lines 45-50. At col. 8, lines 55-65, the composition is embedded with brass-coated steel wires, placed parallel to it and then vulcanized at 153 degrees C.

Bezwada does not teach the composition to be a shrinkage control material or elastomeric molding, however, since the same materials are employed, they are considered equivalents.

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Bezwada does not teach a specific thickness of adhesive within 5 to 25 microns. It would have been obvious to one of ordinary skill in the art to produce a thickness of 5 to 25 microns, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. The thickness effects the amount of shrinkage. Bezwada does not teach a ethylene-propylene-diene ternary copolymer (claim 22 and 23). However, Thomas teaches an adhesion promoting agent such as the aforementioned copolymer at col. 1, lines 45-68. Thomas states any polymer can be bonded to a siliceous material, metal, metal oxide or another polymer with said silane compound. Exemplary polymers which can be bonded are the hydrocarbon polymers including saturated, unsaturated, linear, atactic, crystalline or nonlinear amorphous polymers, copolymers, terpolymers, etc. as for example ethylene--propylene--dicyclopentadiene terpolymer. Hence it would have been obvious to one of ordinary skill in the art to modify the rubber around brass-coated steel wire of Bezwada to further include an ethylene-propylene-diene ternary copolymer since Thomas teaches the addition is a known adhesion promoting agent and can be bonded to any metal and polymer at col. 1, lines 45-48.

Conclusion

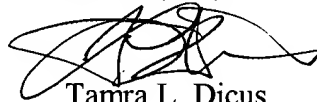
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is (703) 305-3809. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 746-8329 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Tamra L. Dicus
Examiner
Art Unit 1774

April 28, 2003

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

